

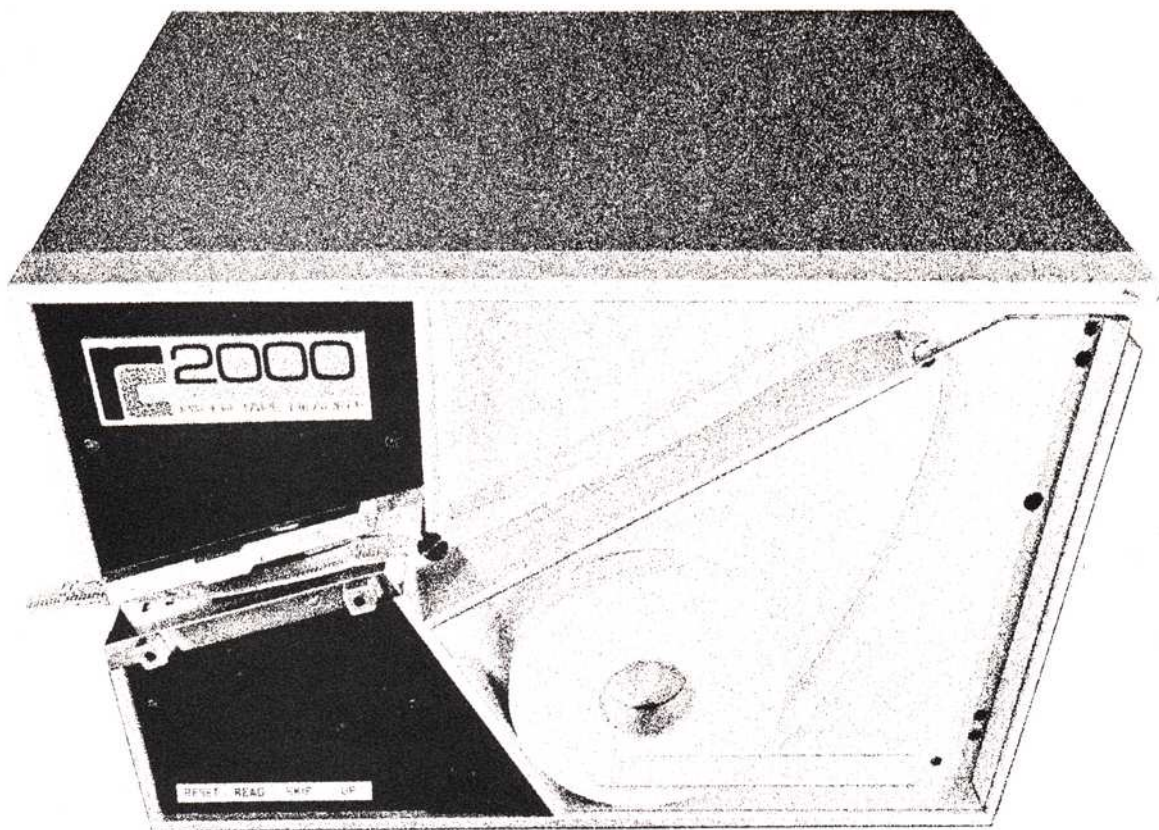
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**PAPER TAPE INPUT  
AT 2000 CPS  
- AND MORE...**

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**r2000<sup>®</sup>**  
**PAPER TAPE READER**





# R2000<sup>®</sup>

## PAPER TAPE READER

### CHARACTERISTICS

Reading Speed:  
Character Size:  
Tape Widths:

max. 2000 characters/second  
max. 8 bits

5 tracks: 17.5 mm  
6 tracks (Olivetti): 20.6 mm  
7 and 8 tracks: 25.5 mm  
min. 2.54 mm center to center

Intercharacter Spacing:

any opaque material

Tape Media:

max. 0.3 mm

Tape Thickness:

max. 300 m

Tape Length:

outer: max. 200 mm

Tape Roll Diameter:

220 V  $\pm$  10 %, 50 Hz  $\pm$  4 %, max. 1 A

Power:

temperature: 16 to 32° C

Ambient Air:

relative humidity: 40 to 70 %

Cooling Air:

120 m<sup>3</sup>/hour from ambient

119 kcal/hour

Size and Weight:

width: 52.0 cm

depth: 46.3 cm

height: 32.6 cm

weight: 36.0 kg





# RC 2100

AUTOMATIC TAPE WINDER

## CHARACTERISTICS

Winding Speed:	max. 5 meters/second
Tape Widths:	5, 6, 7, and 8 tracks
Tape Length:	max. 300 m
Tape Roll Diameter:	outer: max. 200 mm
Power:	200 V $\pm$ 15 %, 50 Hz
Size and Weight:	width: 40.0 cm
	depth: 26.0 cm
	height: 76.3 cm (lowest)
	weight: 38.5 kg

# RC 2010

READER STAND

Size and Weight:	width: 52.0 cm
	depth: 44.0 cm
	height: 51.0 cm (lowest)
	weight: 30.0 kg

## FEATURES

### Speed

The RC 2000 reads paper tapes continuously at 5 meters a second; this corresponds to 2,000 characters a second for standard round-hole formats, and 1,650 characters a second for the Olivetti rectangular-hole format.

The RC 2000 can transfer bursts of up to 128 characters intermittently to the computer at speeds of up to 20,000 characters a second, depending on the number of unprocessed characters in the buffer store.

### Versatility

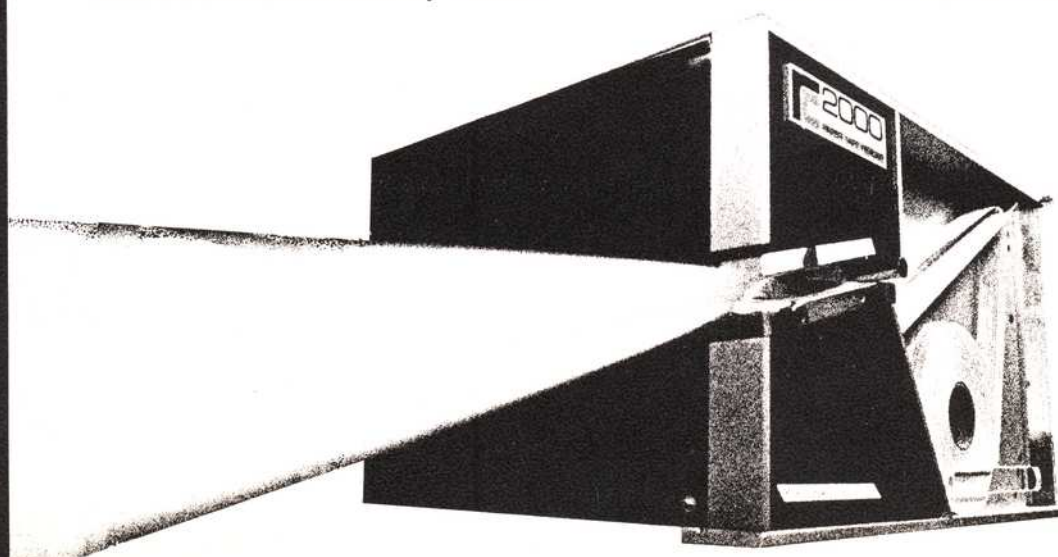
The RC 2000 reads paper tapes punched in any suitable opaque medium, accepting both standard round-hole formats, with widths equivalent to 5, 7, and 8 tracks, and the rectangular-hole 6-track format used by Olivetti.

### Reliability

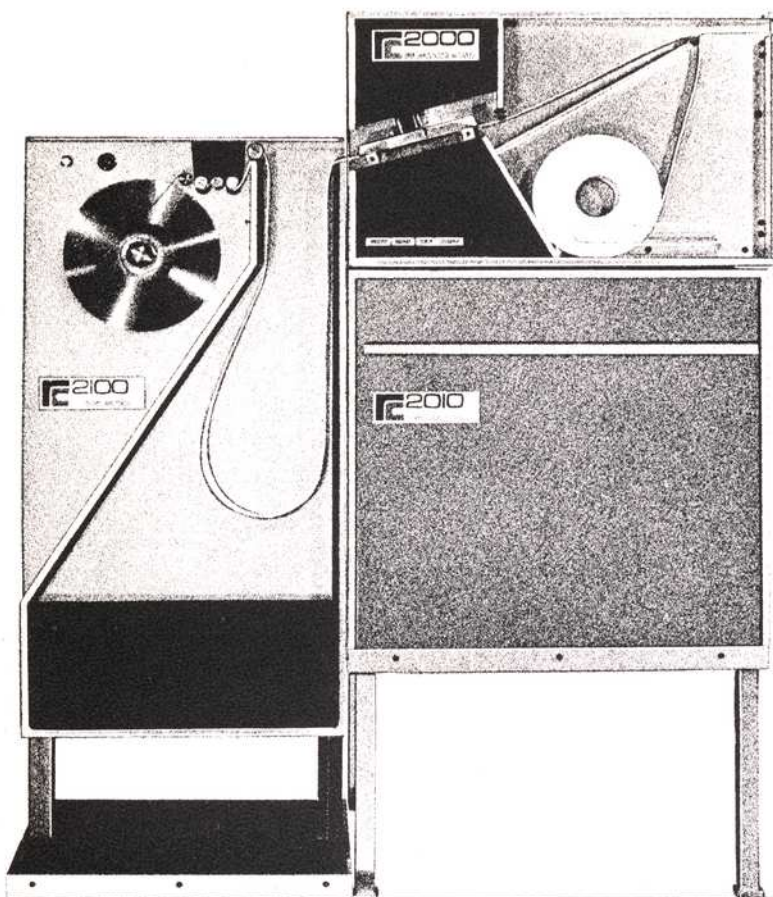
The RC 2000 is a fully transistorized, photo-electric reader containing a solid-state cyclic buffer store of 256 characters. For greater simplicity and reliability, Regnecentralen has employed electronic functions wherever possible in order to reduce the number of mechanical parts to an absolute minimum.

### Fast, Easy Operation

The RC 2000 can be loaded in a second because of the absence of pinch-rollers and mechanical clutches. Everything needed for operation is found on the front panel. The RC 2000 has only four push-button controls, and tape format is changed simply by turning two knobs (which also switches the connections between the photocells and the buffer store to correspond to the tape format selected).







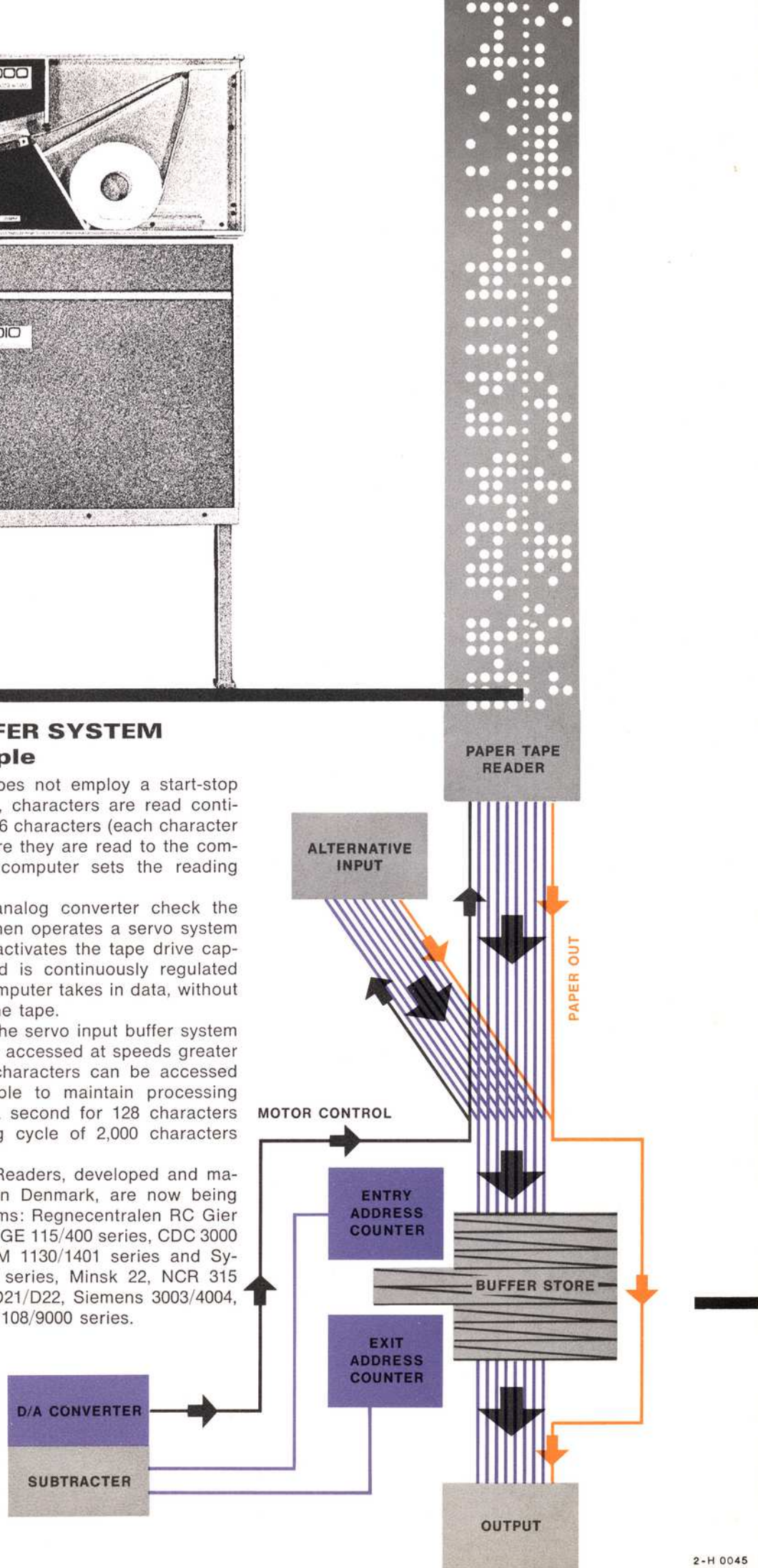
## THE SERVO INPUT BUFFER SYSTEM - A New Reading Principle

Unlike most readers, the RC 2000 does not employ a start-stop character reading operation; instead, characters are read continuously into a cyclic buffer store of 256 characters (each character containing up to 8 bits), and from here they are read to the computer character by character. The computer sets the reading speed.

A register system and a digital-to-analog converter check the state of the buffer; this information then operates a servo system to vary the speed of the motor that activates the tape drive capstan. In this way, the reading speed is continuously regulated according to the rate at which the computer takes in data, without any stops or starts until the end of the tape.

Apart from reducing tape breakage, the servo input buffer system permits characters in the buffer to be accessed at speeds greater than the actual reading speed. As characters can be accessed every 50 microseconds, it is possible to maintain processing speeds of up to 20,000 characters a second for 128 characters or less within an overall processing cycle of 2,000 characters a second.

More than 600 RC 2000 Paper Tape Readers, developed and manufactured by A/S Regnecentralen in Denmark, are now being used in the following computer systems: Regnecentralen RC Gier and RC 4000, Bull Gamma 30 and Bull GE 115/400 series, CDC 3000 series, Honeywell 200/400 series, IBM 1130/1401 series and System/360 series, ICL 1004/1500/1900 series, Minsk 22, NCR 315 and Century series, RCA 301, Saab D21/D22, Siemens 3003/4004, Telefunken TR4/TR440, Univac 1004/1108/9000 series.





### **Non-Stop Operation**

The RC 2000 does not require stopping at a particular place on the tape, for instance, between holes or on holes. Nor does the RC 2000 stop on parity errors; this often unwanted check can be programmed as a computer operation if required.

The RC 2000 does stop automatically at the physical end of tape; the paper-out control blocks all further input to the buffer store and raises the pressure lid to permit reloading.

### **Automatic Tape Winder**

The optional RC 2100 automatically winds tapes of all formats as fast as they are read by the RC 2000. The winder can accommodate up to 300 meters of tape (a roll 20 cm in diameter) at a maximum winding speed of 5 meters a second. The height of the stand is adjustable.

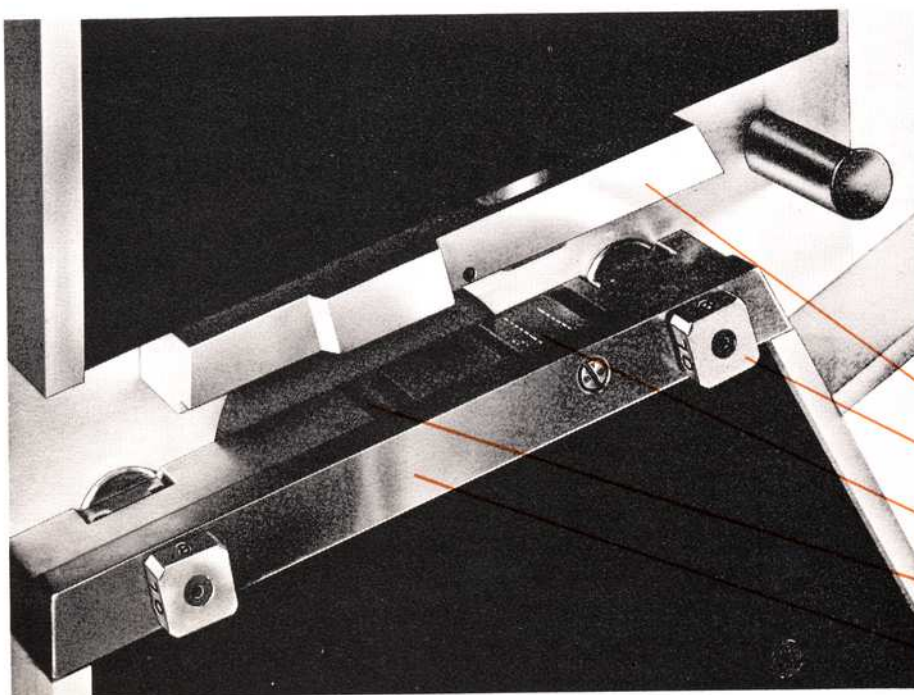
### **Convenient Reader Stand**

The optional RC 2010 provides a separate stand for the RC 2000, when the latter is not placed on the computer console. A bin at the back of the stand keeps input/output cables out of the way, and shelves inside accommodate paper tapes and accessories. The height of the stand is adjustable.

### **Some Applications**

The RC 2000 is also used by Regnecentralen in the RC 3000 Converter System, where it serves as a general-purpose input device. The RC 3000 is designed primarily to free computers from the time-consuming burden of handling large quantities of data on low-speed input/output devices. The RC 3000 operates such devices itself – independently of the computer – and can convert all input and output data to and from magnetic tape. By so doing, one can use high-speed magnetic tape exclusively as an input/output medium, and thereby minimize the time spent by the computer on unproductive input/output operations.

For further information, including technical specifications, contact your computer supplier or Regnecentralen.



PRESSURE LID

TAPE FORMAT KNOB

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TAPE DRIVE CAPSTAN

TAPE GUIDE



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